PROFESSIONAL DEVELOPMENT TOOLKIT
FOR NEW AND BEGINNING TEACHERS

TECHNOLOGY USE AND INTEGRATION

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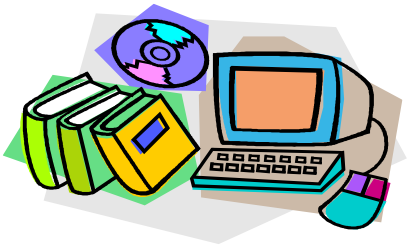

Virginia Commonwealth University

The Commonwealth Educational Policy Institute

L. Douglas Wilder School of Government and Public Affairs

Richmond, Virginia

PROFESSIONAL DEVELOPMENT TOOLKIT
FOR
NEW AND BEGINNING TEACHERS

A project administered by

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Professional Development Toolkit for New and Beginning Teachers

The PROFESSIONAL DEVELOPMENT TOOLKIT FOR NEW AND BEGINNING TEACHERS is a research-based video streamed program with accompanying resource documents. The program is an outgrowth of a previous Commonwealth Educational Policy Institute (CEPI) online mentoring study at Virginia Commonwealth University. The findings of the online mentoring study revealed twelve topics new and beginning teachers felt additional university training would have led them to more effective use of best practices in the classroom. In this program, each of the twelve topics is presented in two to six stand alone video segments. The total number of segments is forty five. Suggested uses, in addition to personal viewing by K-12 teachers for self improvement, include professional development, mentor and mentee, university prospective teacher, and small or large group training.

The facilitators are university faculty and practitioners with field experience. Each is currently involved in teacher training or serves as a staff development administrator. All are currently engaged in educational research, teaching and/or educational policy development.

The teachers in the video programs are classroom teachers. Some of them were participants in the 2006 Online Mentoring Study in which the topics for this project were identified. They represent all disciplines in K-12 grades.

Resource documents for the programs are provided as PDF files to facilitate the use of the 45 video segments. The first set of documents is composed of: (1) a description of the project, (2) an introduction to program facilitators, including a definition of each topic, and a list of the video segments, and (3) a research formative study summary that helped to guide the project's development. The second set of documents is composed of: (1) a description of the project, (2) a full text transcript for each video segment, (3) a set of problems and solutions related to each video segment in the form of a work-study guide, and (4) an annotated bibliographic summary of references and Internet links for each transcript. Many of the organizations and agencies referenced in the transcripts are actively involved in the development of video and professional development presentations that support policy and advocacy.

Every reasonable effort is made to present current and accurate information. Internet content, however, does appear, disappear and change over time. CEPI, as a university-based educational policy research institute endorses no specific position of any listed group.

TECHNOLOGY INTEGRATION

SEGMENT #2: INTEGRATING TECHNOLOGY

🗁 VIDEO SEGMENT TRANSCRIPT

Technology Use and Integration: Ability and skills necessary to make use of technology as an instructional and evaluative tool to assist the development of such skills as critical thinking, test taking, and problem solving.

Facilitator: Dr. Bill Bosher, Jr. Distinguished Professor
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AUDIO	VIDEO
Many different types of technologies can be used to support and enhance teaching. Everything from video content and digital moviemaking to laptop computing and handheld technologies have been used in classrooms. New uses of technology such as podcasting, where a series of digital media files are distributed over the Internet and played back on portable media and computers, are constantly emerging. I am Bill Bosher, Executive Director of the Commonwealth Educational Policy Institute and VCU Distinguished Professor of Public Policy and Education. In this segment, I want to share with you how the use of new and emerging technologies in teaching and learning addresses the challenges of teaching and learning in the classroom. Various technology applications deliver different kinds of content and serve different purposes in the classroom. They include: word processors, graphics tools, presentation software, databases, spreadsheets and telecommunications, and the Internet. Let's examine briefly some ways that these applications may be used in teaching. For the purposes of illustration, let's say that the unit of study is conservation and the environment. The objective is to have students gain an understanding of personal responsibility and policy decisions relating to the environment. The activity is to have students develop a short public service announcement (PSA)to raise awareness about an environmental issue (i.e. recycling, conservation, green living, and pollution). Word processing is an excellent tool for writing. Students use wordprocessing to record information on local environmental issues and to create, edit and format the script for the PSA. Wordprocessing programs are used to compose letters to local political, business and community leaders requesting information.	DR. BOSHER

Students use graphics tools and desktop publishing to create a storyboard, add animation, and work with multimedia images. These programs eliminate many of the difficulties associated with editing and producing. These images can be imported to print or video format for presentation. Presentation software is used to produce and display computer text and images, usually for presentation to a group. Students could use video and digital cameras to film examples of the impact of an environmental issue. Presentation software is an excellent tool for communication enhancement. Students could use the information that they collect to build a database and create a spreadsheet to support their position and to develop a "what if" simulation or hypothesis-testing activity on an environmental issue. What would be the impact on the environment if everyone practiced recycling? Computer database software gives students the capability for creating, editing, and manipulating organized collections of information. Telecommunications and the Internet provide students access to resources and information not available locally. They can access free graphics, sound, and videostreamed presentations. Students may, for example, wish to create a webpage to illustrate the importance of conservation to the environment. Through email students may communicate with specialists and local leaders in the area with regard to specific environmental issues. Let's talk a bit with our teachers about how they use some of these applications in their instruction.	
I'm Emily Hedstrom, and I've been teaching for one year. I teach 6-8th grade social studies. In Henrico County middle schools each student has an iBook. There are tons of great classroom uses for technology. Some of my most creative and successful uses this year revolve around the blog I've set up. It's the perfect tool for lesson extensions. Almost every week, I post a new question that asks students to look at the material we're working on from a new, and hopefully deeper perspective. I also have my Quia page and other approved interactive links in a sidebar on my blog. Whenever students finish a lesson early, I remind them to visit the blog, post a comment, and check out the links. There's always something new for them, and I can be sure that they're visiting sites that are on-topic and are safe. To encourage thoughtful and well-written posts, I give extra credit at the end of the nine weeks for excellent posts. VirtualShare is another way I've been able to encourage students. Just giving a word document with webquest questions and the necessary hyperlinks, gets students excited about an activity. A paper copy of the same activity is never as exciting as when they can type the answer into the worksheet while they complete the webquest. It also eliminates having students type in web addresses, because the links are embedded in the worksheet.	**EMILY HEDSTROM**
My name is Allison Sapp. I am a middle school math teacher. I have taught for 1 year.	**ALLISON SAPP**

I have found that technology is a great tool for teachers to use to assist classroom organization, teaching presentations, and data analysis. I use spreadsheets to create an organized grade book and to calculate grade percentages. My use of spreadsheets and other organizational software result in additional time for me to focus on specific areas of need. Other useful technologies include Exam View, which acts as a test simulator. It provides opportunities for students to take and practice taking tests and quizzes; and the Promethean Board which creates an environment for student presentations and active participation. I often use information that has been generated through use of these technologies to identify what needs to be included in remediation and to plan what I must re-teach. A continuing debate about standards-based assessment is that it is too factoid. We want young people to use higher order skills, problem solving, and research techniques, and, be able to assess their progress in these areas. Technology is a wonderful tool to take a broader and deeper look into what students are able to do and what they know.	**DR. BOSHER**

🗁 PROBLEMS AND SOLUTIONS

Ask yourself:

How am I using technology personally? How do I incorporate technology into my teaching? What new techniques do I want to try in the future?

Suggested use for this module:

1. **Analyze:**

   Please select one of the scenarios below and problem-solve a list of possible solutions. Record your ideas in the space provided. Discuss these ideas with your other educators (mentor, colleagues, or other beginning teachers).

2. **View:**

   Watch the corresponding video on this topic. How does this information change your ideas?

3. **Compare:**

   Revisit the scenario selected. Next, review the section entitled, "Possible Solutions" comparing the ideas listed with your own list.

4. **Reflect:**

   How will you apply this new information to your current or future classroom? What goal will you set to help you begin to change your practices? What support is needed to help you accomplish this goal?

5. **Apply:**

   List the first step towards change below. Create a timeline for success and place deadlines in your personal planner as a reminder. How will you know when you have met your goals?

Scenarios 1 & 2: Technology Use and Integration

Scenario 1

Don: "My students are all technology natives using digital materials in almost every aspect of their lives. They use technology for text messaging, viewing websites and movies, downloading music, playing video game systems, and researching for their homework assignments. I find it challenging to incorporate less paper and more technology into my classroom. I feel that there is a disconnect between my students and my teaching methods."

How does Don's classroom compare with your own teaching experiences?

Scenario 2

Susan: "I love using multimedia in my classroom. I am currently using digital tools to take digital field trips on my content and for student's to publish their writing. Student's also complete literature circles on the classroom laptops, discussing the novels we have been reading. Although my students enjoy these activities, I would like to try something new for my next teaching unit."

What ideas do you have for Susan to try? How does your classroom compare with her methods?

Circle the scenario that you selected below:

Scenario 1 Scenario 2

Record a list of your own possible solutions here:

Summary & Goal Setting:

POSSIBLE SOLUTIONS

Integrating technology into your teaching will enhance learner engagement and improve understanding of content knowledge. Use digital tools to share knowledge and link learning with real-world experiences in real-time formats. Technology is a useful tool for teaching students to solve problems for themselves, improving interactions with others with diverse backgrounds, and tracking learning across time.

Teacher Time-Saving Solutions:

- Utilize email to increase the speed of communication and improve your access to information.
- Convert paper processes to digital processes to eliminate administrative bottlenecks
- Scan copies of student work to create e-portfolios and to share progress with families
- Use presentation software to create countdown clocks, test reviews in game show formats, and provide visuals during instruction.

Integrating Technology into Instruction:

- Encourage students to chat about content or key ideas on your teaching unit in a shared classroom forum (word processing, internet)
- Teach students to use technology to display, gather, and analyze information (Possible tools: webs and organizers, word processing, databases, and spreadsheets)
- Encourage students to work in cooperative groups to share information (presentation software)
- Create classroom outlines, idea maps, storyboards, and graphic organizers (word processing, software)
- Incorporate electronic fieldtrips to virtually visit places of study (internet)
- Seek information to unanswered questions (Research and information retrieval, search engines)
- Design a WebQuest for inquiry-oriented learning (internet)
- Organize student presentations and group work (word processing, presentation software)
- Collaborate with other students learning about the same topic (internet, word processing, video)
- Utilize digital cameras to:
    - ✓ take photos of class experiences and write about them
    - ✓ use photos for graphing or sequencing activities
    - ✓ inspire creative writing
    - ✓ create an alphabet book which summarizes key learning in any subject area
    - ✓ email as an attachment for families in a good news message
    - ✓ insert photos as newsletter illustrations
    - ✓ build vocabulary for all learners (especially ELL students)

- ✓ to compare different ecosystems or habitats
- ✓ teach specific skills (such as simile and metaphors)
- ✓ create a brochure or power point for a unit of study

Most school divisions have technology specialists who can co-teach or share teaching resources. Find out who serves in this capacity in your building and request support!

- Mentors need to remind beginning teachers to not underestimate the amount of work involved in making technological transitions both for themselves and for their students.

  Runge, A.: Speigel, A.: Pytlik, L.: Dunbar, S.; Fuller, R., Sowell, G. & Brooks, D. (1999). *Hands-on computer use in science classrooms: The skeptics are still waiting.* Journal of Science Education and Technology, v8 n1, p.33-44.

- Research points to time as the major instructional concern. The technological learning curve has a huge time component. Mentors should try to help new teachers make realistic time estimates for learning or teaching. Many new technology and have them be prepared to let go of some other parts of their curriculum or instructional activities.

  Niguidula, D. (1997). *Picturing performance with digital portfolios*. Educational Leadership, v99 n3 p. 26-29.

- It is essential that new teachers take time to survey and evaluate the potential that specific Internet sites offer. Technology has its quirks and breakdowns, and access may not be available on demand or on the class's schedule; mentors may need to remind new teachers to include alternatives in their lesson planning just in case problems arise.

  Mistler-Jackson, M. & Songer, N. (2000). *Student motivation and internet technology: Are students empowered to learn science?* Journal of Research in Science Teaching, 37(5), p. 459-479.

- The RAC (research, analysis, and communication) model is an instructional framework for integrating technology into the curriculum through lesson planning and assessment across subjects and grade levels.
  - Research: students gather information from various sources
  - Analysis: data analysis depends upon the results of the research
  - Communication: students prepare products to share their results

  Bowens, E. M. (2000). *Meeting standards with technology.*. Retrieved October 18, 2007, from www.iste.org

- Research suggests that teachers identified the following benefits of RAC- based (research, analysis, and communication) lesson planning:
  - It allows for more student-centered learning.
  - Students engage in more critical thinking.
  - Material can be integrated across subject areas
  - It is easily incorporated into performance-based classrooms.
  - Students are required to apply important skills in a meaningful context.
  - It provides opportunities to evaluate students' work.

  Bowens, E. M. (2000). *Meeting standards with technology.* Retrieved October 18, 2007, from www.iste.org

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Niguidula, D. (1997). Picturing performance with digital portfolios. *Educational Leadership*, v99 n3, p26-29.

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